



Louisville Metro Air Pollution Control District
850 Barret Avenue
Louisville, Kentucky 40204-1745



Permit No.: 36017-13-C

Plant ID 60

Effective Date: [Click here to enter a date.](#)

Expiration Date: [Click here to enter a date.](#)

Permit Fee \$

Kosmos Cement Company
15301 Dixie Hwy
Louisville, KY 40272

is authorized to construct the described process and control equipment by the Louisville Metro Air Pollution Control District. Authorization is based on information provided with the application submitted by the company and in accordance with applicable regulations and the conditions specified herein.

Process and Control equipment description:

One (1) new South Truck/Railcar Loading Spout (K1485)(500 ton/hr) for cement by Midwest International, model MVL43H 540C Vaculoder, Class IA/II with integrated Dust Collector (K1487A).

Applicable Regulation(s): 2.03, 2.04, 2.05, 5.00, 5.01, 5.02 (40 CFR 63 Subpart LLL), 5.20, 5.21, 5.22, 5.23, 7.08

Control reference(s): N/A

Application No.: 33717

Application Received:

10/4/2011

Permit Writer: Randy Schoenbaechler

Public Comment Date: 4/4/2013

{manager1}
Air Pollution Control Officer
{date1}

This permit covers only the provisions of Kentucky Revised Statutes Chapter 77 Air Pollution Control, the regulations of the Louisville Metro Air Pollution Control District (District) and, where appropriate, certain federal regulations. The issuance of this permit does not exempt any owner or operator to whom it has been issued from prosecution on account of the emission or issuance of any air contaminant caused or permitted by such owner or operator in violation of any of the provisions of KRS 77 or District regulations. Any permit shall be considered invalid if timely payment of applicable fees is not made after receipt of the statement of fees (SOF). The permit contains general permit conditions and specific permit conditions. General conditions are applicable unless a more stringent requirement is specified elsewhere in the permit.

General Conditions

- G1. The owner or operator of the affected facility covered by this permit shall notify the District of any process change, equipment change, material change, or change in method or hours of operation. This requirement is applicable to those changes that may have the potential for increasing the emission of air contaminants to a level in excess of the applicable limits or standards specified in this permit or District regulations.
- G2. The owner or operator shall obtain new or revised permits from the District when:
(See [District Regulation 2.16](#) for Title V sources. See [District Regulation 2.17](#) for FEDOOP sources. See [District Regulation 2.03](#) for other sources.)
- a. The company relocates to a different physical address.
 - b. The ownership of the company is changed.
 - c. The name of the company as shown on the permit is changed.
 - d. Permits are nearing expiration or have expired.
- G3. The owner or operator shall submit a timely application for changes according to G2. For minor sources only, the District does not require application for permit renewal. The District automatically commences the process of permit renewal for minor sources upon expiration. Timely renewal is not always achievable; therefore, the company is hereby authorized to continue operation in compliance with the latest District permit(s) until the District issues the renewed permit(s).
- G4. The owner or operator shall not be authorized to transfer ownership or responsibility of the permit. The District may transfer permits after appropriate notification (Form [100A](#)) has been received and review has been made.
- G5. The owner or operator shall pay the required permit fees within 30 days after issuance of the SOF by the District, unless other arrangements have been proposed and accepted by the District.

- G6. This permit allows operation 8,760 hours per year unless specifically limited elsewhere in this permit.
- G7. The owner or operator shall submit emission inventory reports as required by [Regulation 1.06](#).
- G8. The owner or operator shall timely report abnormal conditions or operational changes, which may cause excess emissions as required by [Regulation 1.07](#).
- G9. Unless specified elsewhere in this permit, the owner or operator shall complete required monthly record keeping within 30 days following the end of each calendar month.
- G10. If a change in the "Responsible Official" (RO) occurs during the term of this permit, the owner or operator shall provide written notification ([Form 100A](#)) to the District within 30 calendar days of the date the RO change occurs.

Specific Conditions

S1. **Standards** (Regulation 2.03, Section 5.1)

a. **PM/PM₁₀/PM_{2.5}**

- i. The owner or operator shall limit the PM emissions of the South Truck/Railcar Loading Spout (K-1485) to less than 46.79 lb/hr. (Regulation 7.08, section 3.1.2) (See Comment 1)
- ii. The owner or operator shall operate and maintain dust collector (K-1487A) reasonable, available, and practical , for the South Truck/Railcar Loading Spout (K-1485) emission point, in order to achieve compliance with the emission limits. (Regulation 7.08, section 3.1.2)
- iii. For the South Truck/Railcar Loading Spout (K-1485) the owner or operator shall not allow the PM emissions to exceed 25 tons per 12 consecutive months. (Regulation 2.05)
- iv. For the South Truck/Railcar Loading Spout (K-1485) the owner or operator shall not allow the PM₁₀ emissions to exceed 15 tons per 12 consecutive months. (Regulation 2.05)
- v. For the South Truck/Railcar Loading Spout (K-1485) the owner or operator shall not allow the PM_{2.5} emissions to exceed 10 tons per 12 consecutive months. (Regulation 2.04)

b. **Opacity**

The owner or operator of the South Truck/Railcar Loading Spout (K-1485) shall not cause the emission into the open air of particulate matter that equals or exceeds twenty percent (20%) opacity. (Regulation 7.08, section 3.1.1)

c. **HAP**

- i. The owner or operator of the South Truck/Railcar Loading Spout (K-1485) shall not cause to be discharged any gases from these affected sources which exhibit opacity in excess of ten percent (10%). (40 CFR 63.1345)
- ii. The owner or operator of each Portland cement plant shall prepare for each affected source subject to the provisions of this subpart, a written operations and maintenance plan. The plan shall be submitted to the Administrator for review and approval as part of the application for a part 70 permit and shall include the following information: (40 CFR 63.1347(a)) (Regulation 5.02, section 3.53)

- 1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emission limits and operating limits of 40 CFR 63.1343 through 63.1348; (40 CFR 63.1347(a)(1)) (Regulation 5.02, section 3.53)
- 2) Corrective actions to be taken when required by 40 CFR 63.1350(f)(3); (40 CFR 63.1347(a)(2)) (Regulation 5.02, section 3.53) and
- 3) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year. (40 CFR 63.1347(a)(3)) (Regulation 5.02, section 3.53)

d. **TAC**

- i. The owner or operator shall not allow emissions of any TAC to exceed environmentally acceptable (EA) levels, whether specifically established by modeling or determined by the District to be de minimis. (Regulations 5.00 and 5.21)
- ii. The owner or operator shall not exceed the limits in the following table. (Regulation 5.21) (See Comment 2)

TAC	Limit (lb/hr)	Limit (lb/yr)
Chromium ⁺⁶	NA	0.113
Manganese	0.027	24
Nickel	0.002	1.82
Lead	0.04	38.4
Arsenic	0.00012	0.11
Cadmium	0.0003	0.27
Cobalt	0.004	4.38

- iii. The owner or operator shall operate and maintain dust collector (K-1487A) when reasonable, available, and practical, for the South Truck/Railcar Loading Spout (K-1485) emission point, in order to achieve compliance with the emission limits. (Regulation 5.21)

S2. **Monitoring and Recordkeeping** (Regulation 2.03, section 5.1)

a. **PM/PM₁₀/PM_{2.5}**

- i. The owner or operator shall perform a monthly visual inspection of the structural and mechanical integrity of the dust collector (K-1487A) for signs of damage, air leakage, corrosion, or other equipment defects, and

repair and/or replace defective components as needed. The owner or operator shall maintain monthly records of the results.

- ii. The owner or operator shall maintain daily records of any periods of time where the process was operating and the control device was not operating or a declaration that the control device operated at all times that day when the process was operating.
- iii. If there is any time that the control device is bypassed or not in operation when the process is operating, then the owner or operator shall keep a record of the following for each bypass event:
 - 1) Date;
 - 2) Start time and stop time;
 - 3) Identification of the control device and process equipment;
 - 4) PM emissions during the bypass in lb/hr;
 - 5) Summary of the cause or reason for each bypass event;
 - 6) Corrective action taken to minimize the extent or duration of the bypass event; and
 - 7) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.
- iv. The owner or operator shall monthly calculate the 12 month rolling total of PM emissions from the South Truck/Railcar Loading Spout (K-1485).
- v. The owner or operator shall monthly calculate the 12 month rolling total of PM₁₀ emissions from the South Truck/Railcar Loading Spout (K-1485).
- vi. The owner or operator shall monthly calculate the 12 month rolling total of PM_{2.5} emissions from the South Truck/Railcar Loading Spout (K-1485).
- vii. The owner or operator shall calculate emissions using the following emission factors until such time that alternative factors have been established by a stack testing stipulated in the permit or otherwise and approved by the District..
For:
 - PM uncontrolled = 0.1 lb / ton of throughput
 - PM₁₀ uncontrolled = PM_{2.5} uncontrolled = 0.028 lb / ton of throughput
 - PM controlled = 0.02 gr/dscf
 - PM₁₀ controlled = (50%) 0.02 gr/dscf
 - PM_{2.5} controlled = (25%) 0.02 gr/dscf

b. Opacity

- i. The owner or operator shall conduct a daily one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, within 24 hours of the initial observation.
- iii. The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

c. **HAP**

- i. The owner or operator must conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of Appendix A-7 to 40 CFR 60. The test must be conducted while the affected source is in operation. (40 CFR 63.1350(f)(1)(i))
- ii. If no visible emissions are observed in six consecutive monthly tests for any affected source, the owner or operator may decrease the frequency of testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the owner or operator must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests. (40 CFR 63.1350(f)(1)(ii))
- iii. If no visible emissions are observed during the semi-annual test for any affected source, the owner or operator may decrease the frequency of testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual test, the owner or operator must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests. (40 CFR 63.1350(f)(1)(iii))
- iv. If visible emissions are observed during any Method 22 test, the owner or operator must conduct a 6-minute test of opacity in accordance with Method 9 of appendix A to 40 CFR 60. The Method 9 test must begin

within one hour of any observation of visible emissions. (40 CFR 63.1350(f)(1)(iv))

- v. If any partially enclosed or unenclosed conveying system transfer point is located in a building, the owner or operator of the Portland cement plant shall have the option to conduct a Method 22 visible emissions monitoring test according to the requirements of 40 CFR 63.1350(a)(4)(i) through (iv) for each such conveying system transfer point located within the building, or for the building itself, according to 40 CFR 63.1350(f)(1)(vii). (40 CFR 63.1350(f)(1)(vi))

d. **TAC**

- i. For any period of time when the process, South Truck/Railcar Loading Spout (K-1485), was operating and dust collector K-1487A was not controlling emissions properly, the owner or operator shall maintain the following records:
 - 1) The start and stop time;
 - 2) The process throughput during the control device downtime;
 - 3) The emissions of Manganese, Nickel, Lead, Arsenic, Cadmium, and Cobalt in units of lb/hr;
 - 4) The emissions of Chromium⁺⁶, Manganese, Nickel, Lead, Arsenic, Cadmium, and Cobalt in units of lb/yr for the month during which the control device downtime occurred plus emissions from the previous 11 months; these calculations shall additionally be made for the following 11 months after the control device downtime such that a 12 month rolling total is calculated for any consecutive 12 month period which includes the month of the occurrence;
 - 5) Summary information on the cause or reason for each event;
 - 6) Corrective actions taken to minimize the extent of each event; measures implemented to prevent reoccurrence.
- ii. The owner or operator shall maintain records sufficient to demonstrate environmental acceptability, including, but not limited to MSDS, analysis of emissions, and/or modeling results.
- iii. The owner or operator shall re-evaluate the environmental acceptability and document the environmentally acceptable emissions if a new TAC is introduced or the content of a TAC in a raw material increases.

S3. Reporting (Regulation 2.03, section 5.1)

The owner or operator shall submit semi-annual compliance reports that include the information in this section. All reports shall include the company name, plant ID number, and the beginning and ending date of the reporting period. The compliance reports shall clearly identify any deviation from a permit requirement. The compliance reports shall be postmarked within 60 days following the end of each reporting period. All semi-annual compliance reports shall include the following certification statement per Regulation 2.16, section 3.5.11. (See Comment 3)

- “Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this document are true, accurate, and complete”.
- Signature and title of company responsible official.

a. PM/PM₁₀/PM_{2.5}

- i. The owner or operator shall report any occurrence of having not performed the monthly visual equipment integrity inspection, or a negative declaration of missing inspections.
- ii. The owner or operator shall report the following information regarding PM bypass activity:
 - 1) The start and stop time of the period;
 - 2) The average pound per hour PM emissions during the period per emission point associated with the control device; or
 - 3) A negative declaration, if the control device was operating properly at all times the process equipment was operating during the reporting period.
- iii. The owner or operator shall report the 12 consecutive month PM/PM₁₀/PM_{2.5} emissions for each month in the reporting period for Load Spout K-1485.

b. Opacity

- i. Any deviation from the requirement to perform Method 22 tests or Method 9 tests;
- ii. Any deviation from the requirement to record the results of each Method 22 and Method 9 test performed;

- iii. The number, date, and time of each Method 22 where visible emissions were observed and the results of the Method 9 test performed;
- iv. Identification of all periods of exceeding the opacity standard; and
- v. Description of any corrective action taken for each exceedance of the opacity standard.

c. **HAP**

See S3.b

d. **TAC**

- i. The owner or operator shall report the following information regarding TAC bypass activity:
 - 1) The start and stop time of the period;
 - 2) The result of calculations required by S2.d.i.3) and S2.d.i.4); or
 - 3) A negative declaration, if the control device was operating properly at all times the process equipment was operating during the reporting period.
- ii. The owner or operator shall report any conditions that were inconsistent with those conditions analyzed in the most recent Environmental Acceptability Demonstration or a negative declaration stating that operations were within the conditions analyzed. This includes, but is not limited to, control device upset conditions.
- iii. For any conditions outside the analysis, the owner or operator shall re-analyze to determine whether these conditions comply with the STAR program. Changes to the air dispersion modeling program or meteorological data used in the most recent Environmental Acceptability Demonstration do not trigger the requirement to re-analyze. (Regulation 5.21 sections 4.22 – 4.24)
- iv. The owner or operator shall submit the re-evaluated EA demonstration to the District within 6 months of a change of a raw material as described in **Error! Reference source not found.i.**

S4. **Testing** (Regulation 2.03, section 5.1)

The owner or operator shall construct all equipment in such a manner that the following testing requirements can be performed.

a. **PM**

- i. The owner or operator shall perform an EPA Reference Method 201A performance test within 180 days of achieving normal operation on the inlet and outlet of the control device or emission point to determine the emission rate and control efficiency. The test shall be performed at 90% or higher of maximum capacity, or allowable/permitted capacity, or at a level of capacity which results in the greatest emissions and is representative of the operations. Failure to perform the test, at maximum capacity, allowable/permitted capacity, or at a level of capacity which resulted in the greatest emissions, may necessitate a re-test or necessitate a revision of the allowable/permitted capacity of the process equipment depending upon the difference between the testing results and the limit. In lieu of the control efficiency test, the owner or operator may submit a signature guarantee from the control device manufacture stating the control device efficiency.
- ii. In lieu of conducting the required performance test on the new South Truck/Railcar Loading Spout (K1485) Dust Collector (K1487A) the Company may submit a Method 201A performance test on any device which processes cement, or the results of a Method 201A performed within the last 5 years from any Cemex plant for equipment which processes cement. The resulting PM speciation shall be assumed in all emission calculations for devices which have not had a Method 201A performance test conducted or for which a value is not specified by any EPA emission calculation guidance documents.
- iii. The owner or operator shall submit to the District a signature guarantee from the control device manufacturer for all devices which the Company wishes to be credited as achieving a specific grain loading value for purposes of emission calculations, except for control devices which have specifically been tested with an applicable EPA Reference Method and which has demonstrated that the grain loading value is achieved at maximum production.
- iv. The owner or operator shall submit written compliance test plans (protocol) for the control efficiency. They shall include the EPA test methods that will be used for PM compliance testing, the process operating parameters that will be monitored during the compliance test, and the control device performance indicators (e.g. pressure drop) that will be monitored during the compliance test. The compliance test plans shall be furnished to the District at least 30 days prior to the actual date of the compliance test. Attached to the permit is a Protocol Checklist for Performance Test for the information to be submitted in the protocol.

- v. The owner or operator shall provide the District at least 10 days prior notice of any compliance test to afford the District the opportunity to have an observer present.
- vi. The owner or operator shall furnish the District with a written report of the results of the compliance test(s) within 60 days following the actual date of completion of the compliance test(s).
- vii. The owner or operator shall provide written notification to the District of the actual date of initial startup. The written notification shall be postmarked within 15 days of achieving normal operation.

b. Opacity

The owner or operator shall demonstrate compliance with the opacity limit by initially conducting a test in accordance with Method 9 of 40 CFR 60 Appendix A at the same time as the Method 5 PM performance test within 180 days of achieving normal operation. The test shall be performed at maximum capacity or allowable/permitted capacity or at a level of capacity which results in the greatest emissions and is representative of the operations. Failure to perform the test at these conditions may necessitate a re-test. The maximum 6-minute average opacity exhibited during the test period shall be used to determine whether the affected source is in initial compliance with the standard. The duration of the Method 9 performance test shall be 3 hours (30 6-minute averages).

c. HAP

- i. 63.1349(b)(2) Opacity tests.
If you are subject to limitations on opacity under this subpart, you must conduct opacity tests in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The duration of the Method 9 performance test must be 3 hours (30 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if the conditions of paragraphs (b)(2)(i) through (b)(2)(ii) of this section apply. For batch processes that are not run for 3-hour periods or longer, compile observations totaling 3 hours when the unit is operating.
- ii. The owner or operator shall perform the test within 180 days of start-up as required by 40 CFR 63.7(a)(2)(ix) on the outlet of the control device or emission point. The test shall be performed at 90% or higher of maximum capacity, or allowable/permitted capacity, or at a level of capacity which results in the greatest emissions and is representative of the operations. Failure to perform the test, at maximum capacity, allowable/permitted capacity, or at a level of capacity which resulted in the greatest emissions, may necessitate a re-test or necessitate a revision of the

allowable/permitted capacity of the process equipment depending upon the difference between the testing results and the limit.

- iii. The owner or operator shall submit written compliance test plans (protocol). They shall include the EPA test methods that will be used for Opacity compliance testing. The compliance test plans shall be furnished to the District at least 30 days prior to the actual date of the compliance test. Attached to the permit is a Protocol Checklist for Performance Test for the information to be submitted in the protocol.
- iv. The owner or operator shall provide the District at least 10 days prior notice of any compliance test to afford the District the opportunity to have an observer present.
- v. The owner or operator shall furnish the District with a written report of the results of the compliance test(s) within 60 days following the actual date of completion of the compliance test(s).
- vi. The owner or operator shall provide written notification to the District of the actual date of initial startup. The written notification shall be postmarked within 15 days of achieving normal operation.

Comments

1. The potential controlled PM emissions are less than the PM standard from Regulation 7.08.
2. The TACs Chromium⁺³, Mercury, and Copper are de minimis uncontrolled. The TACs Manganese, Nickel, Lead, Arsenic, Cadmium, and Cobalt are de minimis controlled and will need to be demonstrated as compliant in the case of control device downtime. The increase in emissions from the old loading spout to the new one has been estimated by the District in PTE dated 12/2/2011 to increase the risk to approximately 0.97 plantwide which is less than the environmentally acceptable limit of 1, therefore; a limit of 0.113 lb/yr has been determined for Chromium+6 as this is 3% higher than the controlled potential which was used to determine the risk of 0.97.
3. The semi-annual compliance reports are due on or before the following dates of each calendar year:

<u>Reporting Period</u>	<u>Report Due Date</u>
January 1st through June 30th	August 29th
July 1st through December 31st	March 1 st

4. Construction permit fees are based on equipment subject to Federal PSD/NSR and having received limits to avoid PSD review in accordance with Regulation 2.08, Section 2.5.1.1.

Protocol Checklist for Performance Test

A completed protocol should include the following information:

- ☐ Facility Name, Location, and ID #;
- ☐ Responsible Official and Environmental Contact Names;
- ☐ Permit #s which are requiring the test to be conducted;
- ☐ Test methods to be used (i.e. EPA Method 1, 2, 3, 4, and 5);
- ☐ Alternative test methods or description of modifications to the test methods to be used;
- ☐ Purpose of the test including equipment, and pollutant to be tested; the purpose may be described in the permit which requires the test to be conducted or may be to show compliance with a Federal Regulation or emission standard;
- ☐ Tentative test dates (these may change but the District will need final notice at least 10 days in advance of the actual test dates in order to arrange for observation);
- ☐ Maximum rated production capacity of the system;
- ☐ Production rate goal to be achieved during the performance test for demonstration of compliance;
- ☐ Method to be used for determining rate of production during the performance test;
- ☐ Method to be used for determining rate of production during subsequent operations of the process equipment to demonstrate compliance;
- ☐ Description of normal operation cycles;
- ☐ Discussion of operating conditions that tend to cause worse case pollution emissions; it is specifically important to clarify this if worst case emissions do not come from the maximum production rate;
- ☐ Process Flow Diagram;
- ☐ List the type and manufacturer of the control equipment if any;
- ☐ List the Control Equipment (baghouse, scrubber, condenser, etc.) parameter data to be monitored and recorded during the performance test; note that these will be used to ensure representative operation during subsequent operations; this can include pressure drops, flow rates, pH, and temperature; since the parameters achieved during the test may be required during subsequent operations describe what pressure drops, etcetera, are indicative of good operating performance; and
- ☐ Generally describe the proposed test, how it will be conducted, how measurements will be taken, and how quality assurance and accuracy of the data will be maintained.
- ☐ How quality assurance and accuracy of the data will be maintained, including;
 - Sample identification and chain-of-custody procedures;
 - Are Audit samples required for this test Method (EPA contact number for Audit Samples 919-541-1062) if yes then please make samples available to the District for observation during the stack test;

- Audit Sample Provider;
 - Number of Audit Samples to be used:
- Pipe, duct, stack, or flue diameter to be tested;
- Distances from the testing sample ports to the nearest upstream and downstream flow disturbances such as bends, valves, constrictions, expansions, and exit points for outlet and additionally for inlet;
- Determine number of traverse points to be tested for outlet and additionally for inlet if required using Appendix A-1 to 40 CFR Part 60;
 - Method 1 if stack is >12"
 - Method 1a if stack is between 4" and 12"
 - Alternate method of determination for <4"
 - If a sample location at least two stack or duct diameters downstream and half a diameter upstream from any flow disturbance is not available then an alternative procedure is available for determining the acceptability of a measurement location. This procedure described in Section 11.5 allows for the determination of gas flow angles at the sampling points and comparison of the measured results with acceptability criteria.